LISTING OF THE CLAIMS
(including amendments, if any)

1. (**currently amended**) A method of processing a database query, the query including ~~one or more~~ **an** expression~~s~~, the method including:

performing expression optimization ~~on one or more of~~ the expression~~s~~;

performing further query optimization **to produce a result**;

saving the result in a memory;

performing ~~where the~~ expression optimization ~~is performed~~ before further query optimization; and

where ~~each~~ **the** expression includes ~~one or more~~ **a** sub-expression~~s~~ **("SE")**, and where the expression optimization includes**[[,]]:**

representing the query as a tree structure;

representing the expression in the tree structure as a parent node having a first child node and a second child node;

where the first child node represents the sub-expression;

where the second child node represents the portion of the expression that is not the sub-expression; and

where the parent node represents an operation between the first child node and the second child node;

determining that the second child node represents the constant 0 and that the parent node represents an arithmetic operation selected from the group consisting of addition and subtraction; and

in response, removing the parent node and its children from the tree structure and inserting the first child node in its place.

~~**for each expression:**~~

~~**(1) if the expression has a form selected from the group consisting of "SE+0," "SE*1," and "SE/1," where SE is a sub-expression, then reducing the expression to SE.**~~

2-6. (**cancelled**)

7. (Original) The method of claim 1, where the query includes an assignment list clause and where one or more of the expressions are in the assignment list clause.

8. (Original) The method of claim 1, where the query includes a WHERE clause, and where one or more of the expressions are in the WHERE clause.

9. (Original) The method of claim 1, where further query optimization includes:
determining a satisfiability of the database query.

10. (Original) The method of claim 1, where further query optimization includes:
determining a transitive closure of the database query.

11. (Original) The method of claim 1, where further query optimization includes:
determining one or more plans for executing the query.

12. (Original) The method of claim 11, where one of the one or more plans includes:
scanning a table to locate rows that satisfy one or more conditions; and
summing one or more columns in the rows that satisfy the one or more conditions.

13. (Original) The method of claim 1, where further query optimization includes:
selecting an optimal plan from executing the database query.

14. (Original) The method of claim 1, where further query optimization includes two or more optimizations selected from the group consisting of:
determining a satisfiability of the database query;
determining a transitive closure of the database query;
determining one or more plans for executing the query; and
selecting an optimal plan from executing the database query.

15. (**currently amended**) A computer program, stored on a tangible storage medium, for use in processing a database query, the query including ~~**one or more**~~ **an** expression~~**s**~~, the computer program including executable instructions that cause a computer to:

perform expression optimization on one or more of the expressions;

perform further query optimization **to produce a result**;

save the result in a memory;

where **the expression includes a sub-expression ("SE"), where** ~~**the**~~ expression optimization is performed before further query optimization, and where the computer program ~~**including**~~ **includes** executable instructions that cause a computer to~~**, for each expression**~~:

represent the query as a tree structure;

represent the expression in the tree structure as a parent node having a first child node and a second child node;

where the first child node represents the sub-expression;

where the second child node represents the portion of the expression that is not the sub-expression; and

where the parent node represents an operation between the first child node and the second child node;

determine that the second child node represents the constant 0 and that the parent node represents an arithmetic operation selected from the group consisting of addition and subtraction; and

in response, remove the parent node and its children from the tree structure and insert the first child node in its place.

~~**(1) determine if the expression has a form selected from the group consisting of "SE+0," "SE*1," and "SE/1," where SE is a sub-expression, and if so, then reduce the expression to SE.**~~

16-20. (**cancelled**)

21. (Original) The computer program of claim 15, where the query includes an assignment list clause and where one or more of the expressions are in the assignment list clause.

22. (Original) The computer program of claim 15, where the query includes a WHERE clause, and where one or more of the expressions are in the WHERE clause.

23. (Original) The computer program of claim 15, where further query optimization includes:
determining a satisfiability of the database query.

24. (Original) The computer program of claim 15, where further query optimization includes:
determining a transitive closure of the database query.

25. (Original) The computer program of claim 15, where further query optimization includes:
determining one or more plans for executing the query.

26. (Original) The computer program of claim 25, where one of the one or more plans includes:
scanning a table to locate rows that satisfy one or more conditions; and
summing one or more columns in the rows that satisfy the one or more conditions.

27. (Original) The computer program of claim 15, where further query optimization includes:
selecting an optimal plan from executing the database query.

28. (Original) The computer program of claim 15, where further query optimization includes two or more optimizations selected from the group consisting of:
determining a satisfiability of the database query;
determining a transitive closure of the database query;
determining one or more plans for executing the query; and
selecting an optimal plan from executing the database query.

29. (**currently amended**) A database system including:
a massively parallel processing system including:
one or more nodes;
a plurality of CPUs, each of the one or more nodes providing access to one or more CPUs;
a plurality of data storage facilities each of the one or more CPUs providing access to one or more data storage facilities;

a process for execution on the massively parallel processing system for processing ~~one or more~~ **a** database ~~queries~~ **query**, ~~each~~ **the** query including ~~one or more~~ **an** expression~~s~~, the process including:

performing expression optimization on ~~one or more of~~ the expression~~s~~;

performing further query optimization **to produce a result**;

saving the result in a memory;

where the expression optimization is performed before the further query optimization; and

where ~~each~~ **the** expression includes ~~one or more~~ **a** sub-expression~~s~~ **("SE")**, and where ~~the~~ expression optimization includes~~, for each expression~~:

representing the query as a tree structure;

representing the expression in the tree structure as a parent node having a first child node and a second child node;

where the first child node represents the sub-expression;

where the second child node represents the portion of the expression that is not the sub-expression; and

where the parent node represents an operation between the first child node and the second child node;

determining that the second child node represents the constant 0 and that the parent node represents an arithmetic operation selected from the group consisting of addition and subtraction; and

in response, removing the parent node and its children from the tree structure and inserting the first child node in its place.

~~(1) if the expression has a form selected from the group consisting of "SE+0," "SE*1," and "SE/1," where SE is a sub-expression, then reducing the expression to SE.~~

30-34. (**cancelled**)

35. (Original) The database system of claim 29, where the query includes an assignment list clause and where one or more of the expressions are in the assignment list clause.

36. (Original) The database system of claim 29, where the query includes a WHERE clause, and where one or more of the expressions are in the WHERE clause.

37. (Original) The database system of claim 29, where further query optimization includes:
determining a satisfiability of the database query.

38. (Original) The database system of claim 29, where further query optimization includes:
determining a transitive closure of the database query.

39. (Original) The database system of claim 29, where further query optimization includes:
determining one or more plans for executing the query.

40. (Original) The database system of claim 39, where one of the one or more plans includes:
scanning a table to locate rows that satisfy one or more conditions; and
summing one or more columns in the rows that satisfy the one or more conditions.

41. (Original) The database system of claim 29, where further query optimization includes:
selecting an optimal plan from executing the database query.

42. (Original) The database system of claim 29, where further query optimization includes two or more optimizations selected from the group consisting of:
determining a satisfiability of the database query;
determining a transitive closure of the database query;
determining one or more plans for executing the query; and
selecting an optimal plan from executing the database query.